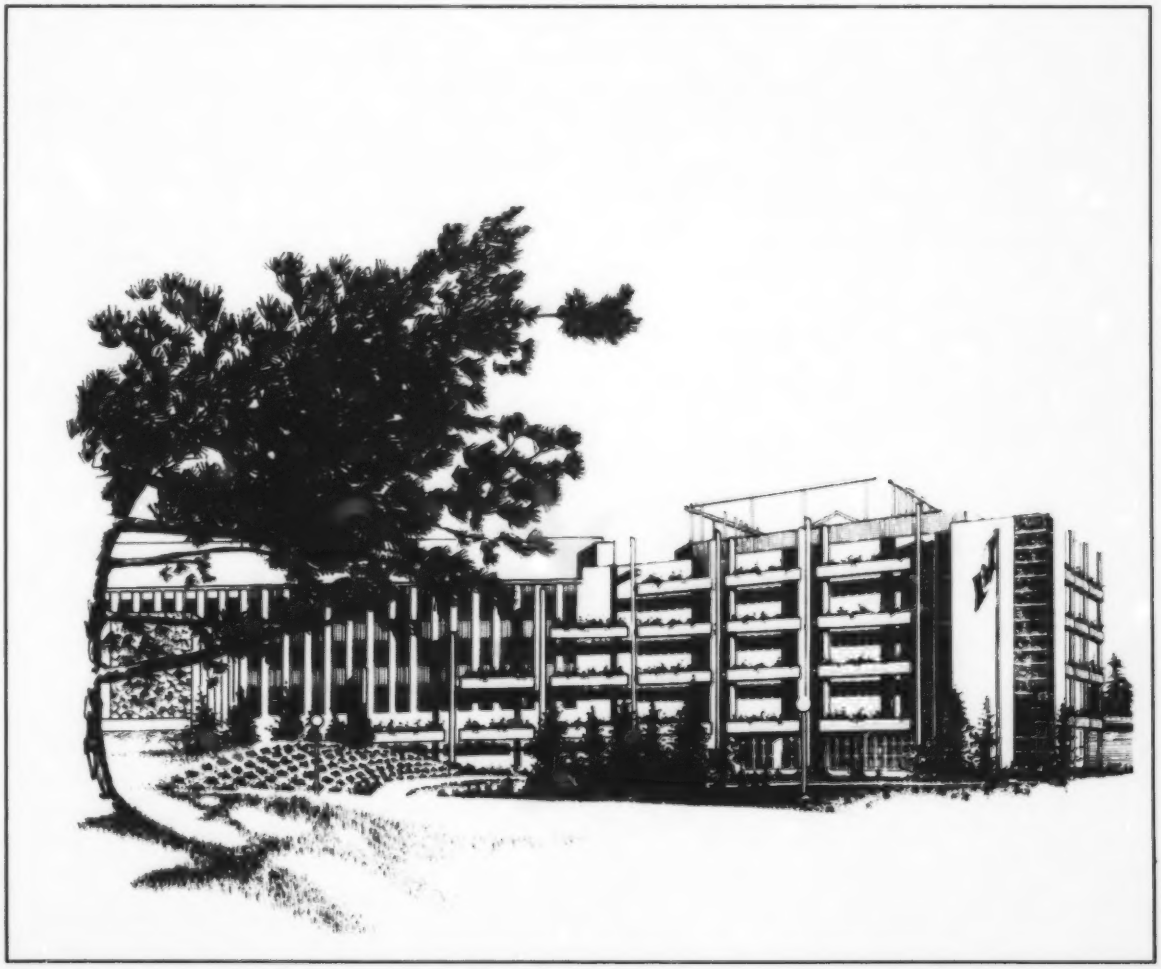
Reports and Publications - 1991

Pacific and Yukon Region • Information Report BC-X-337



Forestry Canada Forêts Canada

Canada

Cover: The Pacific Forestry Centre is one of six regional and two national establishments of Forestry Canada. Situated in Victoria with a district office in Prince George, the Pacific Forestry Centre cooperates with other government agencies, the forestry industry, and educational institutions to promote the wise management of the forest resources of British Columbia and the Yukon.

The Pacific Forestry Centre undertakes research in response to the needs of the various managers of the forest resource. The results of this research are distributed in the form of scientific and technical reports and other publications.

93-00392/

Reports and Publications - 1991

All publications mentioned herein may be obtained
from the Pacific Forestry Centre,
506 West Burnside Road, Victoria, B.C., Canada, V8Z 1M5

Rapports et Publications - 1991

Les publications ci-après mentionnées sont disponibles
au Centre forestieres du Pacifique,
506 chemin Burnside ouest,Victoria, C.-B., Canada, V8Z 1M5

Forestry Canada
Pacific and Yukon Region
Pacific Forestry Centre

BC-X-337
1992

Forestry Canada
Pacific and Yukon Region
Pacific Forestry Centre
506 West Burnside Road
Victoria, British Columbia
V8Z 1M5
Phone (604)363-0600

© Minister of Supply and Services Canada, 1992
Cat. No. Fo46-17/337E
Printed in Canada

Additional copies of this publication
are available in limited quantities
at no charge from the Pacific Forestry Centre

Microfiches of this publication may be purchased from:

MicroMedia Inc.
Place du Portage
165, Hotêl-de-Ville
Hull, Quebec
J3X 3X2

The National Library of Canada has catalogued this publication as follows:

Pacific Forestry Centre

Reports and publications = Rapports et publications

(Information report / Pacific Forestry Centre, ISSN 0830-0453; [BC-X-337])
1984-
Annual.
Prefatory material in English and French, entries in English only.
Key title: Reports and publications - Pacific Forestry Centre.
ISSN 0846-6610

1. Forests and forestry -- Canada -- Bibliography. 2. Pacific Forestry Centre -- Bibliography. I. Title. II. Title: Rapports et publications. III. Coll.: Information report (Pacific Forestry Centre).

Z5991 016.6349 C90-072269-X

This Forestry Canada publication contains recycled paper.

Biology/Immunology

3059. Ekramoddoullah, A.K.M. 1990. Two-dimensional gel electrophoretic analyses of Kentucky bluegrass and rye grass pollen allergens. Int. Arch. Allergy Appl. Immunol. 93:371-377.

3060. Ekramoddoullah, A.K.M. 1991. Analyses of proteins of western white pine (*Pinus monticola* Dougl.) needles. Pages 102-108 *in* Y. Hiratsuka, J.K. Samoil, P.V. Blenis, P.E. Crane, and B.L. Laishley, editors. 1991. Rusts of pine. Proc. 3rd IUFRO Rusts of Pine Working Party Conference. Sept. 18-22, 1989. Banff, Alberta. For. Can., Northwest Reg., North. For. Cent., Edmonton, Alberta. Inf. Rep. NOR-X-317. 408 p.

3061. Tan, Y.; Ekramoddoullah, A.K.M. 1991. Immunochemical characterization of the entomopathogenic fungus *Beauveria bassiana*. J. Invertebr. Pathol. 57:269-276.

3062. White, E.E. 1989. Chloroplast DNA in western white pine - physical map and within-species variation. Pages 109-113 *in* Y. Hiratsuka, J.K. Samoil, P.V. Blenis, P.E. Crane, and B.L. Laishley, editors. 1991. Rusts of Pine. Proc. 3rd IUFRO Rusts of Pine Working Party Conference. Sept. 18-22, 1989. Banff, Alberta. For. Can., Northwest Reg., North. For. Cent., Edmonton, Alberta. Inf. Rep. NOR-X-317. 408 p.

Ecology

3063. Sachs, D.; Trofymow, J.A. 1991. Testing the performance of FORCYTE-11 against results from the Shawnigan Lake thinning and fertilization trials on Douglas-fir. For. Can. Pac. For. Cent. Inf. Rep. BC-X-324.

3064. Smith, R.B.; Wass, E.F. 1991. Impacts of two stumping operations on site productivity in interior British Columbia. For. Can. Pac. For. Cent. Inf. Rep. BC-X-327.

3065. Trofymow, J.A.; Barclay, H.J.; McCullough, K.M. 1991. Annual rates and elemental concentrations of litter fall in thinned and fertilized Douglas-fir. Can. J. For. Res. 21:1601-1615.

3066. Trofymow, J.A.; Sachs, D. 1991. FORCYTE-11 and intensive management of Douglas-fir: Examination of some of the model's short- and long-term predictions of biomass production. Pages 38-57 *in* H. Grewal, Compiler. Forestry Canada modeling working group. Proceedings of the fifth annual workshop. Kananaskis Centre for Environmental Research. December 13-14, 1990. For. Can., Northwest Reg., North. For. Cent., Edmonton, Alberta.

Entomology

3067. Alfaro, R.I. 1991. Damage assessment and integrated pest management of forest defoliators. For. Ecol. Manage. 39:275-281.

3068. Alfaro, R.I.; Qiwei, L.; Vallentgoed, J. 1991. Diameter growth losses in western larch caused by larch casebearer defoliation. West. J. Appl. For. 6(4):105-108.

3069. Alfaro, R.I.; Shepherd, R.F. 1991. Tree-ring growth of interior Douglas-fir after one year's defoliation by Douglas-fir tussock moth. For. Sci. 37(3):959-964.

3070. Barclay, H.J. 1991. Combining pheromone-baited and food-baited traps for insect pest control: effects of additional control by parasitoids. Res. Popul. Ecol. 33(2):287-306.

3071. Barclay, H.J.; Haniotakis, G.E. 1991. Combining pheromone-baited and food-baited traps for insect pest control: effects of developmental period. Res. Popul. Ecol. 33(2):269-285.

3072. Barclay, H.J.; Li, C. 1991. Combining methods of pest control: minimizing cost during the control program. Theor. Popul. Biol. 40(1):105-123.

3073. Gray, T.G.; Shepherd, R.F.; Struble, D.L.; Byers, J.B.; Maher, T.F. 1991. Selection of pheromone trap and attractant dispenser load to monitor black army cutworm, *Actebia fennica*. J. Chem. Ecol. 17(2):309-316.

3074. Heath, R.; Alfaro, R.I. 1990. Growth response in a Douglas-fir/lodgepole pine stand after thinning of lodgepole pine by the mountain pine beetle: a case study. J. Entomol. Soc. B.C. 87:16-21.

3075. Moeck, H.A.; Simmons, C.S. 1991. Primary attraction of mountain pine beetle, *Dendroctonus ponderosae* Hopk. (Coleoptera: Scolytidae), to bolts of lodgepole pine. Can. Entomol. 123:299-304.

3076. Otvos, I.S. 1991. North American species in forestry. Pages 719-756 *in* L.P.S. van der Geest and H.H. Evenhuis, editors. Tortricid pests, their biology, natural enemies and control. Elsevier Science Publishers B.V., Amsterdam, The Netherlands.

3077. Otvos, I.S.; Shepherd, R.F. 1991. Integration of early virus treatment with a pheromone detection system to control Douglas-fir tussock moth, *Orgyia pseudotsugata* (Lepidoptera: Lymantriidae), populations at pre-outbreak levels. For. Ecol. Manage. 39:143-151.

3078. Safranyik, L.; Linton, D.A. 1991. Unseasonably low fall and winter temperatures affecting mountain pine beetle and pine engraver beetle populations and damage in the British Columbia Chilcotin Region. J. Entomol. Soc. B.C. 88:17-21.

3079. Sahota, T.S.; Ibaraki, A. 1991. 1- and 2-year dormancy of the Douglas-fir cone moth, *Barbara colfaxiana* Kft. (Lepidoptera: Olethreutidae): possible relation to individual weights. Can. Entomol. 123:1153-1155.

3080. Taylor, S.; Alfaro, R.I.; Lewis, K. 1991. Factors affecting the incidence of white pine weevil damage to white spruce in the Prince George Region of British Columbia. J. Entomol. Soc. B.C. 88:3-7.

3081. Thomson, A.J. 1991. Simulation of mountain pine beetle (*Dendroctonus ponderosae* Hopkins) spread and control in British Columbia. For. Can. Pac. For. Cent. Inf. Rep. BC-X-329. 18 p.

Environment

3082. Pollard, D.F.W. 1991. Climate change as a current issue for the Canadian forest sector. Environ. Prof. 13:37-42.

3083. Pollard, D.F.W. 1991. Forestry Canada Report to CCEA. *in* T.J. Beechey, Jurisdictional Reports to CCEA for the Period April 1, 1990 - March 31, 1991. Can. Coun. Ecological Areas, Environ. Canada, Ottawa, Occasional Paper. 5 p.

3084. Pollard, D.F.W. 1991. Forestry in British Columbia: planning for future climate today. For. Chron. 67(4):336-341.

3085. Pollard, D.F.W. 1991. Forestry in a greenhouse climate: for wood production or carbon storage? Pages 235-240 *in* G. Wall, editor. Symposium on the impacts of climate change and variability on the Great Plains. Dep. Geogr. Occasional Paper No. 12, Univ. Waterloo, Ont.

3086. Wilson, W.R. 1990. Climate change - factors and forecasts. Can. J. Agric. Econ. 38:677-683.

Forest Insect and Disease Survey

3087. Erickson, R.D.; Ferris, R.L. 1991. Forest insect and disease conditions, Cariboo Forest Region 1990. FIDS Rep. 91-1. 29 p.

3088. Ferris, R. 1991. Forest insect and disease conditions, Yukon Forest Region 1990. FIDS Rep. 91-7. 8 p.

3089. Garbutt, R.; Stewart, A. 1991. Forest insect and disease conditions, Prince Rupert Forest Region 1990. FIDS Rep. 91-5. 42 p.

3090. Humble, L.M. 1991. Occurrence of *Coccinella septempunctata* (L.) (Coleoptera: Coccinellidae) in central British Columbia. Pan-Pac. Entomol. 67(3):224-226.

3091. Humphreys, N.; Clarke, D.H.L. 1991. Forest insect and disease conditions, Vancouver Forest Region 1990. FIDS Rep. 91-6. 46 p.

3092. Koot, H.P.; Hodge, J. 1991. Forest insect and disease conditions, Kamloops Forest Region 1990. FIDS Rep. 91-2. 43 p.

3093. Turnquist, R.; Ferris, R. 1991. Forest insect and disease conditions, Prince George Forest Region 1990. FIDS Rep. 91-4. 36 p.

3094. Unger, L.; Vallentgoed, J. 1991. Forest insect and disease conditions, Nelson Forest Region 1990. FIDS Rep. 91-3. 51 p.

3095. Vallentgoed, J. 1991. Some important woodborers related to export restrictions. For. Can. Pac. For. Cent. For. Pest Leafl. 74. 15 p.

3096. Wood, C.S.; Van Sickle, G.A. 1991. Forest insect and disease conditions—British Columbia and Yukon 1990. For. Can. Pac. For. Cent. Inf. Rep. BC-X-326. 34 p.

FRDA

3097. Chambers, A. (editor) 1991. Wildlife forestry symposium. Proceedings of a Workshop on Resource Integration for Wildlife and Forest Managers. Prince George, British Columbia, March 7 & 8, 1990. For. Can. Pac. For. Cent. FRDA Rep. 160. Victoria, B.C. 182 p.

3098. Hamilton, A.N.; Bryden, C.A.; Clement, C.J. 1991. Impacts of glyphosate application on grizzly bear forage production in the coastal western hemlock zone. Forestry Canada/B.C. Ministry of Forests. FRDA Rep. 165. Victoria, B.C. 49 p.

3099. Hatler, D.F. 1991. A method for monitoring wildlife in managed forests - A field manual (First approximation). Forestry Canada/B.C. Ministry of Forests. FRDA Rep. 172. Victoria, B.C. 55 p.

3100. Hawkins, C.; Draper, D. 1991. Effects of blackout on British Columbia spruce seedlots at Red Rock Research Station. Forestry Canada/B.C. Ministry of Forests. FRDA Rep. 170. Victoria, B.C. 51 p.

3101. Hunt, G.A. 1991. Ectomycorrhizal fungi in British Columbia container nurseries. For. Can. Pac. For. Cent. FRDA Handbook 009. Victoria, B.C. 25 p.

3102. Jozsa, L.A. 1991. Wood properties of subalpine fir, a British Columbia interior wood. Forestry Canada/B.C. Ministry of Forests. FRDA Rep. 168. Victoria, B.C. 12 p.

3103. Letchford, T. 1991. Microclimate monitoring in a study of NSR backlog rehabilitation in the Boreal Region of British Columbia. Forestry Canada/B.C. Ministry of Forests FRDA Rep. 169. Victoria, B.C. 23 p.

3104. Lousier, D. 1991. Yellow cypress: Can we growth it? Can we sell it? For. Can. Pac. For. Cent. FRDA Rep. 171. Victoria, B.C.

3105. Moore, K. 1991. Partial cutting and helicopter yarding on environmentally sensitive floodplains in old-growth hemlock/spruce forests. Forestry Canada/B.C. Ministry of Forests. FRDA Rep. 166. Victoria, B.C. 43 p.

3106. Pearce, C. 1991. Silvicultural decision models: Summary of a workshop. Forestry Canada/B.C. Ministry of Forests. FRDA Rep. 167. Victoria, B.C. 57 p.

3107. Shortreid, A. (editor) 1991. Northern mixedwood '89: Proceedings of a Symposium held at Fort St. John, B.C. - September 12-14, 1989. For. Can. Pac. For. Cent. FRDA Rep. 164. Victoria, B.C. 158 p.

Inventory, Growth and Yield

3108. Bonnor, G.M. 1991. A growth and yield study of interior Douglas-fir in British Columbia. Pages 269-274 *in* D.M. Baumgartner and J.E. Lotan, editors. Interior Douglas-fir: the species and its management. Proceedings of a Symposium, February 27-March 1, 1990, Spokane, Washington, U.S.A. Department of Natural Resource Sciences, Washington State University, Pullman.

3109. Bonnor, G.M.; de Jong, R.; Boudewyn, P. 1991. Sources of growth variability in interior Douglas-fir. For. Can. Pac. For. Cent. Inf. Rep. BC-X-328. 17 p.

Miscellaneous

3110. Anon. 1991. The expected influence of biomass in the British Columbia energy sector to 2010 AD. For. Can. Pac. For. Cent. Inf. Rep. BC-X-325. 77 p.

3111. Blashill, L. 1991. Information Forestry Newsletter. Vol. 18(1) 7 p.

3112. Teske, E. 1991. Information Forestry Newsletter. Vol. 17(2) 8 p.

3113. Teske, E. 1991. Reports and Publications - 1990. Pacific & Yukon Region. For. Can. Pac. For. Cent. Inf. Rep. BC-X-330. 8 p.

3114. Thomson, A.J.; Fleming, R. 1991. Legislative and policy limits to successful integrated pest management in Canada's forests. For. Chron. 67(5):493-499.

3115. Trofymow, J.A.; van den Driessche, R. 1991. Mycorrhizas. Pages 183-227 *in* R. van den Driessche, editor. Mineral nutrition of conifer seedlings. CRC Press.

3116. Wilson, W.R. 1991. Agricultural trade and the big bang. Book Review of "The International Politics of Agricultural Trade: Canadian-American Relations in a Global Agricultural Context," by T.H. Cohn, Univ. British Columbia Press. J. Agric. Econ. Res. 43(1):36.

Pathology

3117. Hunt, R.S. 1990. Blister rust in inoculated and plantation-tested western white pine in British Columbia. Can. J. Plant Pathol. 12:279-282.

3118. Hunt, R.S. 1991. Operational control of white pine blister rust by removal of lower branches. For. Chron. 67(3):284-287.

3119. Shamoun, S.F.; Ekramoddoullah, A.K.M.; Wall, R.E. 1991. Isozyme analysis of *Chondrostereum purpureum* used as a mycoherbicide. Can. J. Plant Pathol. 13(3):285. (Abstract)

3120. Shamoun, S.F.; Thom, D.C.; Wall, R.E.; Ekramoddoullah, A.K.M. 1991. Isozyme patterns of *Chondrostereum purpureum* by vertical polyacrylamide gel electrophoresis. Page 99 *in* A.S. McClay, editor. Proceedings of the workshop on biological control of pests in Canada. October 11-12, 1990, Calgary, Alberta. Alberta Environmental Centre, Vegreville, Alberta. (Abstract)

3121. Shamoun, S.F.; Vrain, T.C.; Wall, R.E. 1991. Genetic variability among isolates of *Chondrostereum purpureum*. Can. J. Plant Pathol. 13(3):285. (Abstract)

3122. Sutherland, J.R. 1991. Management of pathogens in seed orchards and nurseries. For. Chron. 67(5):481-485.

3123. Sutherland, J.R.; Ring, F.M.; Seed, J.E. 1991. Canadian conifers as hosts of the pinewood nematode (*Bursaphelenchus xylophilus*): results of seedling inoculations. Scand. J. For. Res. 6:209-216.

3124. Wall, R.E. 1991. Pathological effects of *Chondrostereum purpureum* in inoculated yellow birch and beech. Can. J. Plant Pathol. 13:81-87.

Silviculture

3125. Grossnickle, S.C.; Arnott, J.T.; Major, J.E.; Tschaplinski, T.J. 1991. Influence of dormancy induction treatments on western hemlock seedlings. I. Seedling development and stock quality assessment. Can. J. For. Res. 21(2):164-174.

3126. Grossnickle, S.C.; Arnott, J.T.; Major, J.E. 1991. Influence of dormancy induction treatments on western hemlock seedlings. II. Physiological and morphological response during the first growing season on a reforestation site. Can. J. For. Res. 21(2):175-185.

Soils

3127. Commandeur, P.R.; Pyles, M.R. 1991. Modulus of elasticity and tensile strength of Douglas-fir roots. Can. J. For. Res. 21:48-52.

3128. Preston, C.M. 1991. Using NMR to characterize the development of soil organic matter with varying climate and vegetation. Pages 27-38 *in* Proceedings of an international symposium on the use of stable isotopes in plant nutrition, soil fertility and environmental studies. Vienna, Oct. 1-5, 1990. International Atomic Energy Agency, Vienna, Austria.

3129. Senyk, J.P.; Smith, R.B. 1991. Estimating impacts of forest harvesting and mechanical site preparation practices on productivity in British Columbia. Pages 199-211 *in* W.J. Dyck and C.A. Mees, editors. Long-term Field Trials to Assess Environmental Impacts of Harvesting. Proceedings, IEA/BE T6/A6 Workshop, Florida, USA, February 1990. IEA/BE/A6 Report No. 5. Forest Research Institute, Rotorua, New Zealand, FRI Bulletin No. 161.

Vegetation Management

3130. Dorworth, C.E. 1989. Employment of pathogens to constrain growth of undesirable forest vegetation. Pages 471-476 *in* E.S. Delfosse, editor. Proceedings VII. Int. Symp. Biol. Contr. Weeds, March 6-11, 1988, Rome, Italy. Ist. Sper. Patol. Veg. (MAF).

3131. Dorworth, C.E. 1991. Bioherbicides in forest vegetation management - The PFC program. Pages 15-17 *in* H.D. Skipper, editor. Proceedings: Rhizobacteria - Prospects for Weed Management, May 15-17, 1991, USDA - Agric. Res. Serv., Pullman, WA., U.S.A. 45 p.

3132. Sieber, T.N.; Sieber-Canavesi, F.; Dorworth, C.E. 1991. Endophytic fungi of red alder (*Alnus rubra*) leaves and twigs in British Columbia. Can. J. Bot. 69:407-411.

3133. Sieber, T.N.; Sieber-Canavesi, F.; Petrini, O.; Ekramoddoullah, A.K.M.; Dorworth, C.E. 1991. Characterization of Canadian and European *Melanconium* from some *Alnus* species by morphological, cultural and biochemical studies. Can. J. Bot. 69:2170-2176.

3134. Stasiak, M.A.; Hoffstra, G.; Payne, N.J.; Prasad, R.; Fletcher, R.A. 1991. Alterations of growth and shikimic acid levels by sublethal glyphosate applications on pin cherry and trembling aspen. Can. J. For. Res. 21(7):1086-1090.

3135. Wall, R.E.; Shamoun, S.F. 1990. Experiments on vegetation control with native pathogenic fungi in the southern interior of British Columbia. Forestry Canada/B.C. Ministry of Forests. FRDA Rep. 134. Victoria, B.C. 18 p.